

Appl. No. 10/634,027
Docket No. 9045M2
Amdt. dated 12 October 2006
Reply to Office Action mailed on 13 April 2006
Customer No. 27752

AMENDMENTS TO THE DRAWINGS

- Figure 2: A Replacement Sheet showing Figure 2, in which the contrast between “lighter” and “darker” traces is increased, is attached hereto.
- Figure 5: A Replacement Sheet showing Figure 5, in which the contrast between “lighter” and “darker” traces is increased, is attached hereto.

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REMARKS

Claim Status

Claims 1-5 are pending in the application, of which Claims 1, and 3-4 are withdrawn as the result of a Restriction Requirement. Herein, Applicants amend Claims 2 and 5; cancel Claims 1, and 3-4; and add Claims 6-9, WHEREUPON Claims 2, and 5-9 remain to be examined. No additional claims fee is believed to be due.

Claims 2 and 5 are amended to particularly point out and distinctly claim the subject matter Applicants regard as their invention by indicating that the method is for indentifying "drug candidate compounds", for which basis lies, at least, at page 8, lines 1-2, of the specification as originally filed. Claims 2 and 5 have also been amended to correct grammar.

Claims 1, and 3-4 are canceled without prejudice.

Claims 6-9 are added to more particularly point out and distinctly claim the subject matter of Applicants' invention by indicating preferred embodiments of atomic coordinates of the 3D structure of the HPTPbeta catalytic domain. Basis lies, at least, in Claim 2, as originally filed.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

Amendments to the Specification

The specification has been amended to delete the cross reference to related applications (page 1, beginning at line 3), but to preserve the incorporation by reference of the disclosure of USSN 60/413,547.

The specification has been amended at the Brief Description of the Drawings and Tables section beginning at page 2, line 24, to comply with the sequence disclosure rules by inserting SEQ ID NOs where appropriate and to correct grammar by making "Figure" plural, where appropriate in the same section.

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It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

Amendments to the Drawings

The drawings have been amended at Figures 2 and 5 (provided as Replacement Sheets), by increasing the amount of contrast between “lighter” and “darker” traces within each Figure, respectively.

It is believed these changes do not involve any introduction of new matter. Consequently, entry of these changes is believed to be in order and is respectfully requested.

Formal Matters

The Examiner indicates that the claim of priority to USSN 60/413,547 is improper as the instant application and the provisional do not share a common inventor.

By the amendments presented herein, Applicants have deleted the paragraph in the Specification identifying a claim of priority to said provisional. As such, the objection is believed to be obviated, and Applicants respectfully request it be withdrawn.

The Examiner objects to the Specification, indicating that SEQ ID NOs need to be inserted each time the phrase “HPTPbeta” appears to refer to a specific amino acid sequence or nucleic acid sequence, a SEQ ID NO should follow the phrase, further indicating that such sequences occur at pages 2-3 and 15-16 of the Specification.

By the amendments presented herein, Applicants amend the Specification by inserting SEQ ID NOs where the phrase “HPTPbeta” refers to specific sequences. As such, the objection is believed to be obviated, and Applicants respectfully request it be withdrawn.

The Examiner objects to the Drawings, indicating that in Figures 2 and 5, which compare conformations of 3D structures, the structures cannot be distinguished.

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By the amendments presented herein, Applicants amend Figures 2 and 5 (provided as Replacement Sheets), by increasing the amount of contrast between “lighter” and “darker” traces within each Figure, respectively. As such, the objection is believed to be obviated, and Applicants respectfully request it be withdrawn.

Alleged Indefinitess

Claims 2 and 5 are rejected under 35 USC §112, 2nd paragraph, as allegedly being indefinite for failing to particularly point out and distinctly claim the subject matter Applicants regard as their invention. Applicants respectfully traverse the rejection as applied to amended Claims 2 and 5 as presented herein for the reasons set forth below.

The Examiner asserts that the phrase “compound useful for treatment of angiogenesis mediated disorder” in Claims 2 and 5 is indefinite, as *in silico* methods identify potential compounds useful for treatment (emphasis added).

By the amendments presented herein, Applicants amend Claims 2 and 5, in pertinent part, to read “a drug candidate compound for the treatment...”. As such, the rejection is believed to be obviated, and Applicants respectfully request it be withdrawn.

The Examiner asserts that the phrase “a compound that binds to HPTPbeta *in silico*” in Claim 2 is indefinite, as a compound may bind to a protein/enzyme *in vivo* or *in vitro*, but would not bind *in silico*.

Applicants submit that the skilled person knows that compounds do not actually bind *in silico*, as it is known that the compound and the protein/enzyme are not actually present in the computer. As supported by Applicants specification (at page 5, line 6), “[a]ctual compounds may be identified from following design and model work performed *in silico*. Applicants submit that the rejected phrase is sufficiently definite to define the metes and bounds of the invention when its meaning is considered in the context of the invention as a whole. As such, the rejection is believed to be improper, and Applicants respectfully request it be withdrawn.

The Examiner asserts that the phrase “*ex vivo* assay” in Claim 5 is indefinite, as it is not defined by the claim and one of ordinary skill in the art would not know its meaning.

Applicants submit that the skilled person knows what *ex vivo* means, e.g. outside of a living organism, which includes both *in vitro* and *in silico*. Applicants submit that the rejected phrase is sufficiently definite to define the metes and bounds of the invention when its meaning is considered in the context of the invention as a whole. As such, the rejection is believed to be improper, and Applicants respectfully request it be withdrawn.

Alleged Obviousness over Computers & Software in view of Fachinger

Claims 2 and 5 are rejected under 35 USC §103(a) as allegedly being unpatentable over the commercial availability of computers and various software packages listed in the specification at pages 10, line 11, to page 11, line 26, in view of Fachinger, et al. Oncogene, vol. 18, pages 5948-53 (1999) [herein "Fachinger"]. Applicants respectfully traverse the rejection as applied to amended Claims 2 and 5 as presented herein for the reasons set forth below.

Fachinger discloses that vascular endothelial protein-tyrosine phosphatase (VE-PTP) is a Tie-2 specific phosphatase expressed in endothelial cells (EC's), and VE-PTP phosphatase activity serves to specifically modulate Angiopoietin/Tie-2 function, and that VE-PTP is a candidate gene for inherited vascular malformations similar to the Tie-2 gene (Abstract). Fachinger also discloses that Tie-2 and HPTPbeta, the human homologue of VE-PTP, are upregulated with increasing cell density in cultured EC's, which in the case of HPTPbeta is thought to play a role in contact inhibition of growth (page 5952, col. 1, last line through col. 2, line 5).

Applicants specification discloses that computer programs such as GRID, MCSS, AUTODOCK, DOCK, and GLIDE (page 10, lines 19-28), which may be used to assist in the process of selecting fragments or chemical entities.

The Examiner asserts that the only difference between the cited art and the claimed invention are the atomic coordinates, and that a method used for its known purpose to compare data sets does not become non-obvious merely because new data becomes available for analysis. However, the Examiner improperly characterizes the atomic coordinates as merely new data. Applicants claim a new and improved method, not merely an old method with new data as the Examiner concludes.

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The 3D structure of an HPTPbeta catalytic domain have not previously been defined by the atomic coordinates set forth as a claim limitation in Applicants' claims. These coordinates cannot simply be read out of the claim as mere data.

Further, the fact that the skilled person may employ previously available software in Applicants method does not render the method obvious. Such software does not come complete with an HPTPbeta catalytic domain defined by the atomic coordinates set forth in the claims. Thus, while the skilled person could use such software to fit a model structure of a potential inhibitor to a 3D structure of HPTPbeta to identify possible modulators for HPTPbeta activity, it is improper to conclude that the skilled person could do the same with the 3D structure of the HPTPbeta catalytic domain required as a claim limitation to be used in Applicants invention.


Applicants submit, for the reasons set forth above, that the cited art does not establish a *prima facie* case of obviousness because it does not teach or suggest all of the claim limitations of Claims 2 and 5. As such, the rejection is believed to be improper, and Applicants respectfully request it be withdrawn.

Conclusion

This response represents an earnest effort to place the application in proper form and to distinguish the invention as now claimed from the applied references. In view of the foregoing, reconsideration of this application, entry of the amendments presented herein, and allowance of all pending Claims is respectfully requested.

Respectfully submitted,

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